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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/600,207	06/19/2003	Darko Segota	11023.3	9028

21999 7590 04/09/2008

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EXAMINER	
ELDRED, JOHN W	

ART UNIT	PAPER NUMBER
3641	

MAIL DATE	DELIVERY MODE
04/09/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/600,207	SEGOTA ET AL.	
	Examiner	Art Unit	
	John Woodrow Eldred	3641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 January 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14,16,17,19-22,24-43 and 45-58* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14, 16, 17, 19-22, 24-43, and 45-58* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-7, 12-14, 16, 17, 19-22, 24-26, 29-34, 37-39, 43-45, 47-49, and 52-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wells et al (5,505,409) in view of Fronek et al (5,848,769) and Mulholland (2,575,185).

Wells et al disclose a fluid flow regulator on the surface of an object comprising a plurality of steps that create low pressure areas and thus effect the fluid flow and drag upon the object. Wells et al disclose the regulators being used upon a variety of object, and specifically mention the broad category of airfoils and wings for aircraft. See especially column 2, lines 18-19; column 3, lines 11-45; and column 4, lines 3-41 of Wells et al. Note that column 3, line 64 teaches a vertical lee face, which reads over the "orthogonal pressure recovery drop". Wells et al teach a movable nose 12 and it is inherent that the leading edge would be orthogonally disposed to the pressure recovery drop when the nose was in a centered position. To employ the fluid flow regulators of Wells et al on a particular airfoil of an aircraft, such as the claimed stabilizer or rudder, is considered to have been obvious to one having ordinary skill in the art, since this is merely applying the disclosed regulators to a particular type of airfoil or wing within the broadly disclosed category of intended use by Wells et al. Also, the limitation of having the "pressure recovery drop located proximate an optimal pressure recovery point" is considered to have been obvious to one having ordinary skill in the art. Applicant defines this "point" as being the curvilinear line along the surface where adverse pressure creates unwanted drag. Wells et al specifically discloses that the flow regulators are to reduce unwanted drag, so it is considered to be normal engineering practice to place a regulators (which are placed at a number of locations) at a position that would be "optimal" to reduce drag in order to increase performance by a

maximum amount. Note that without further structural distinctions, the disclosed fluid flow regulator is considered to read over the diffuser vane". Wells et al fail to disclose that the fluid flow regulator is "removeably attached". Fronek et al teach that it is known to removeably attach various drag reduction articles to aircraft flow surfaces. See especially column 1, lines 20-26 and 32-36; and column 5, lines 44-59. Motivation to combine is the teaching of Fronek et al that "routine maintenance may require that the drag reduction article be removed or replaced." This would allow, for example, damaged articles to be easily replaced. To employ the teachings of Fronek et al on the fluid flow regulator of Wells et al and have the regulator be removeably attached is considered to have been obvious to one having ordinary skill in the art. Wells et al also fails to specify the trailing edge would be orthogonally disposed to the recovery drop. Mulholland teach that it is well known to have an airfoil with trailing and leading edges that are a centered point in cross-section view, such that the recovery drops disposed on the top surface of the airfoil would inherently be orthogonally disposed to the trailing (and leading) edge. To merely employ the drops on a well known wing in place of an unspecified wing such that the recovery drops are orthogonal to both the leading and trailing edges is considered an obvious and unpatentable step.

3. Claims 1-14, 16, 17, 19-22, 24-43, and 45-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Falco (5,133,519) in view of Fronek et al (5,848,769) and Mulholland (2,575,185).

Falco discloses a fluid flow regulator on the surface of an object comprising a plurality of orthogonal steps that create low pressure areas and thus effect the fluid flow and drag upon the object. Falco discloses the regulators being used upon a variety of object, and specifically mention the broad category of airfoils and wings for aircraft. See especially column 7, lines 17-19; column 3, lines 11-60; and Figures 1 and 4 of Falco. To employ the fluid flow regulators of Falco on a particular airfoil of an aircraft, such as the claimed stabilizer or rudder, is considered to have been obvious to one having ordinary skill in the art, since this is merely applying the disclosed regulators to a particular type of airfoil or wing within the broadly disclosed category of intended use by Falco. Also, the limitation of having the "pressure recovery drop located proximate an optimal pressure recovery point" is considered to have been obvious to one having

ordinary skill in the art. Applicant defines this "point" as being the curvilinear line along the surface where adverse pressure creates unwanted drag. Falco specifically discloses that the flow regulators are to reduce unwanted drag, so it is considered to be normal engineering practice to place a regulators (which are placed at a number of locations) at a position that would be "optimal" to reduce drag in order to increase performance by a maximum amount. Falco fails to disclose that the fluid flow regulator is "removeably attached". Fronek et al teach that it is known to removeably attach various drag reduction articles to aircraft flow surfaces. See especially column 1, lines 27-29. Motivation to combine is the teaching of Fronek et al that "routine maintenance may require that the drag reduction article be removed or replaced." This would allow, for example, damaged articles to be easily replaced. To employ the teachings of Fronek et al on the fluid flow regulator of Falco and have the regulator be removeably attached is considered to have been obvious to one having ordinary skill in the art. Falco also fails to specify the trailing edge would be orthogonally disposed to the recovery drop. Mulholland teach that it is well known to have an airfoil with trailing and leading edges that are a centered point in cross-section view, such that the recovery drops disposed on the top surface of the airfoil would inherently be orthogonally disposed to the trailing and leading edges. To merely employ the drops on a well known wing in place of an unspecified wing such that the recovery drops are orthogonal to both the leading and trailing edges is considered an obvious and unpatentable step.

4. Applicant's arguments filed 1-24-08 have been fully considered but they are not persuasive.

The argument concerning the prior art failing to teach an "orthogonal pressure recovery drop" is not considered convincing. The rejections have been modified to make clear that it is obvious to have the recovery drops orthogonal to the leading and trailing edges, in response to the amendment.

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Woodrow Eldred whose telephone number is (571)272-6901. The examiner can normally be reached on Monday to Thursday, from 8:00 a.m. to 5:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone can be reached on 571-272-6873. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/John Woodrow Eldred/
Primary Examiner, Art Unit 3641

JWE